Abstract

Systems, methods, and devices relating to the provision of deliberate predistortion to an input signal to compensate for distortions introduced by an amplifier subsystem. An input signal is received by a signal processing system which includes a predistortion subsystem. The input signal is decomposed and the fragments are then predistorted by the predistortion subsystem by applying a deliberate predistortion to the fragments. The predistorted fragments are then separately processed and recombined to arrive at the system output signal. The predistortion subsystem adaptively adjusts based on characteristics of the system output signal. Also, the predistortion subsystem is equipped with a control system that is state based – the state of the predistortion subsystem is dependent upon the prevailing conditions and, when required, the control system switches the state of the predistortion subsystem. A feedback signal, a replica of the system output signal, is used in updating lookup table entries used to determine the predistortion.